



**GEOLOGIC MAP**  
of the  
**KIRKVILLE QUADRANGLE**  
Itawamba and Prentiss  
Counties, Mississippi

Geology by Ernest E. Russell, PhD  
and Darrel Schmitz, RPG  
Cross-Section by Darrel Schmitz, RPG  
and Jonathan R. Leard, GIT

2019

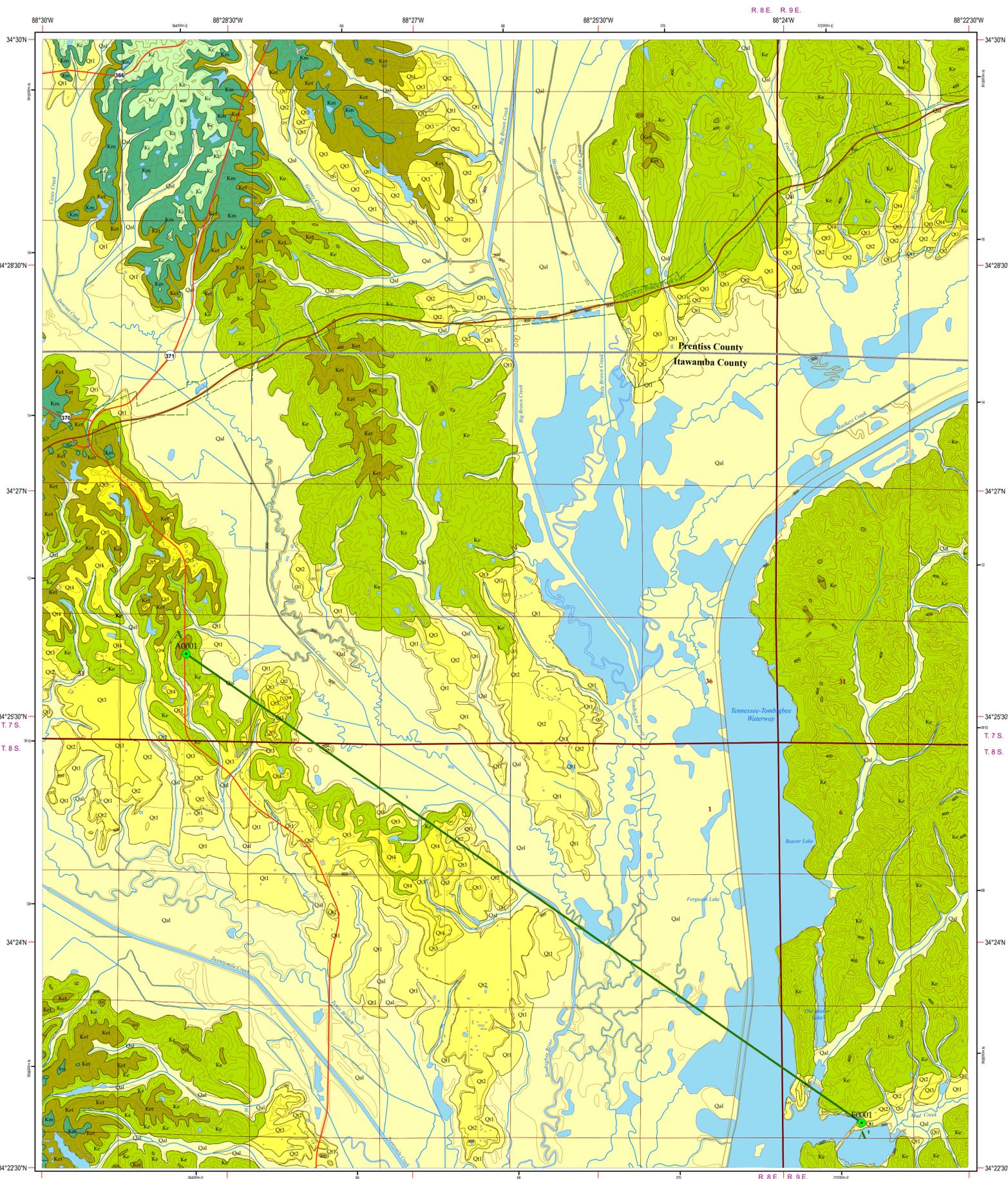
**DESCRIPTION OF MAP UNITS**

QUATERNARY	HOLOCENE	ALLUVIUM
	Qal	Floodplain deposits of clay, silt, and sand. Generally gray, yellowish-orange, orange, and tan. Approximately 25 feet thick along larger streams, thinning up tributaries.
PLEISTOCENE	Q11 Q12 Q13 Q14 Q15	<b>TERRACE ALLUVIUM</b> Abandoned floodplain deposits of clay, silt, and sand generally yellowish-orange, orange, and tan. Approximately 25 feet thick adjacent to larger stream Alluvium or younger terrace deposits, thinning or non-existent up tributaries. Q11 - youngest and lowest in elevation of Terrace alluvium deposits. Q12 - second youngest in age and elevation of Terrace alluvium deposits. Q13 - third youngest in age and elevation of Terrace alluvium deposits. Q14 - fourth youngest in age and elevation of Terrace alluvium deposits. Q15 - fifth youngest in age and higher in elevation Terrace alluvium deposits become increasingly eroded and discontinuous.
CRETACEOUS	SELMMA GROUP	<b>COFFEE SAND</b> Sand, buff, yellow, red-brown, light to dark gray, fine to medium-grained, glauconitic, with zones of silty sand and clay and occasional thin beds of concretionary sandstone layers. Fossiliferous in certain parts. The base of the Coffee Formation is questionably disconformable, almost impossible to differentiate on the basis of lithology from the underlying Tombigbee Member sands. The only evidence are phosphatic molds and general fossils in the basal Coffee not common to the Tombigbee. Thickness ranges up to approximately 45 feet.
UPPER CRETACEOUS	Kc	<b>MOOREVILLE CHALK</b> Massive-bedded marly chalk and calcareous clay. Medium to light gray, and bluish-gray, weathers to tan. Locally sandy and contains subordinate amounts of glauconite. Fossiliferous in many locations. Conformable contact with overlying Coffee Sand. Thickness ranges up to approximately 30 feet.
EUTAW GROUP	Ket Ke	<b>EUTAW FORMATION</b> Ket Tombigbee Member, Sand, Olive drab to light- to reddish-brown, light to dark gray, greenish-gray, fine-grained, massive, glauconitic, in part argillaceous, micaceous, somewhat calcareous, and fossiliferous. The base is conformable with the underlying portion of the Eutaw Formation. Sand, tan, yellow, brown, reddish-brown light to dark gray, laminar of dark gray flaky clay, and stringers of small chert gravel, locally carbonaceous and locally fossiliferous up to approximately 30 feet. Ke The Eutaw Formation disconformably overlies the McShan Formation. Thickness ranges up to approximately 180 feet.

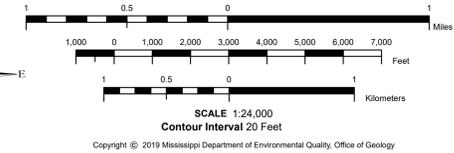
E0001  
● Drill Hole Locality and Identifier



2009-2018 Mississippi Statewide LIDAR-Generated DEM and Hill Shade



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Geology field checked in 1992, 1999, 2017, and 2018 using the 1965 U.S. Geological Survey 7.5-minute topographic quadrangle, Universal Transverse Mercator projection, 1927 North American datum, contour interval 20 feet. Universal Transverse Mercator projection, 1983 North American datum, QRS80 spheroid, 1000-meter Universal Transverse Mercator 1983 datum grid ticks, zone 16, shown in red. October 2019 magnetic declination 2.48° W ± 0.34° changing by 0.07° W per year.  
Sources: Contours obtained from Mississippi Automated Resource Information System (MARIS), Public Land Survey System, 1:24,000 scale, railroad features, highway features, and hydrologic information from MARIS. We thank the National Park Service and Mississippi State University for their cooperation and for facilitating the data collection and fieldwork necessary for this mapping project. Public Land Survey System from MARIS, 1:24,000 scale. Lidar from Brad Segner & Barbara Yassin of The Mississippi Department of Environmental Quality (MDEQ), Natural Resources Conservation Service, National Oceanic and Atmospheric Administration, United States Army Corps of Engineers, and MARIS. Building Footprint data is licensed by Microsoft under the Open Data Commons Open Database License (ODbL).  
Geographic Information System by Katie Grala, and Darrel W. Schmitz, Mississippi State University, and Jonathan R. Leard, GIT, MDEQ Office of Geology-Surface Mapping Division. MDEQ does not warrant the accuracy or completeness of the source data. Geologic maps are only a guide to current understanding and do not eliminate the need for detailed investigations of specific sites for specific purposes.  
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**Structural Cross-Section of the Kirkville 7.5-Minute Geologic Quadrangle**

